Capturing River Restoration from Above

Ryan Keeling
Geography and GIS

Here, from above, you see the Sullivan Creek, a headwater stream of northeastern Washington state, meander through a diverse conifer forest where it meets the still water of Mill Pond. This birds-eye view is a mosaic of over 700 high-resolution images captured from an unmanned aerial vehicle (UAV) or drone. Shortly after this scene was captured, work began to remove the 107-year-old Mill Pond Dam that created these still waters to promote the upstream passage of endangered fish species and restore important near and in-stream habitat. My research investigates the relationship between topography and vegetation, and how those characteristics influence the input of light in streams, in support of this broader stream habitat restoration project. Recent technological advances in UAVs have increased data accessibility, allowing scientists to study interactions between the earth and water at the landscape scale and monitor the progress of restoration projects. In the Sullivan Creek project, these data will be used to assess habitat quality and provide an important baseline data set to be compared to the response of the river and surrounding habitat post-dam removal.